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ARUNACHAL PRADESH
STATE ELECTRICITY REGULATORY COMMISSION
ITANAGAR

NOTIFICATION

The 4th March, 2024

Arunachal Pradesh State Electricity Regulatory Commission (Grid Interactive Distributed Renewable Energy System with Net Metering including Group Net Metering and Virtual Net Metering, Net Billing/Net Feed – In, Gross Metering and Its Related Matters) Regulations, 2024.

No. APSERC/Notification/37/2024.—In exercise of powers conferred under sections 61, 66, 86 (1)(e) and 181 of the Electricity Act. 2003 (Act 36 of 2003) and all other powers enabling it in this behalf, and after previous publication, the Arunachal Pradesh State Electricity Regulatory Commission hereby makes the following regulations for the Grid Interactive Distributed Renewable Energy System with Net Metering including Group Net Metering and Virtual Net Metering, Net Billing/Net Feed– In, Gross Metering and Its Related Matters.

1. Short title and commencement:

- 1.1. These regulations may be called the Arunachal Pradesh State Electricity Regulatory Commission (Grid Interactive Distributed Renewable Energy System with Net Metering including Group Net Metering and Virtual Net Metering, Net-Billing/Net Feed-In, Gross Metering and Its Related Matters) Regulations, 2024.
- 1.2. These Regulations extend to the whole of the State of Arunachal Pradesh.
- 1.3. These regulations shall come into force from the date of their notification in the Gazette of Arunachal Pradesh.

2. Definitions and Interpretations:

- 2.1. In these regulations, unless the context otherwise requires,
 - (a) "Act" means the Electricity Act. 2003 (36 of 2003) and subsequent amendments thereof;
 - (b) "Agreement" means an agreement entered into by the Distribution licensee and the consumer (prospective prosumer);
 - (c) "Billing Cycle or Billing Period" means the period for which regular electricity bills as specified by the Commission, are prepared for different categories of consumers by the licensee;
 - (d) "Commission" means the Arunachal Pradesh State Electricity Regulatory Commission constituted under the Act;
 - (e) "Consumer" means any person who is supplied with electricity for his own use by a licensee or the Government or by any other person engaged in the business of supplying electricity to the public under the Act or any other law for the time being in force and includes any person whose premises are, for the time being, connected for the purpose of receiving electricity with the works of a distribution licensee, the Government or such other person, as the case may be;
 - (f) "Contracted load" or "Contract demand" means the maximum demand in kW, KVA or BHP, agreed to be supplied by the licensee and indicated in the agreement executed between the licensee and the consumer (prospective prosumer);
 - (g) "Days" means clear working days;

- (h) "Distribution licensee" or "licensee" means a person granted a license under Section 14 of the Act authorizing him to operate and maintain a distribution system for supplying electricity to the consumer (prospective prosumer) in his area of supply;
- (i) "Distributed Renewable Energy" (DRE) means the electricity fed into the electric system at a voltage level of below 33 KV using distributed renewable energy generation system or such other forms of renewable sources as may be approved by the Commission from time to time or as recognized by the Ministry of New and Renewable Energy, Government of India.
- (j) "Electricity Supply Code" means the relevant Arunachal Pradesh Electricity Supply Code in force notified under Section 50 of the Act and any subsequent amendments thereof;
- (k) "Feed-in-Tariff" means the Generic Tariff determined by the Commission for the generation of electricity from Renewable Energy projects for Gross Metering or net-billing in accordance with the Terms and Conditions for Tariff determination from Renewable Energy Sources Regulation framed by the Commission;
- (l) "Financial Year" or "Year" means the period beginning from first of April in an English calendar year and ending with the thirty first of the March of the next year;
- (m) "Generation Meter" means a unidirectional energy meter installed as an integral part of net or gross metering system, at the point at where electricity generated by the renewable energy system is delivered to the main panel of the prosumer;
- (n) "Grid" means the low voltage electrical network, the distribution, and transmission network, or the high voltage backbone system of inter-connected transmission lines, sub-stations, and generating plants, for the sale of energy or wheeling of energy as defined in these Regulations;
- (o) "Grid Interactive System (GIS)" means a system that connects the Renewable Energy generating plant in an electricity Consumer's (Prospective Prosumer) premises to a utility grid, so as to supply excess electricity to the distribution company's grid, after meeting the need of Consumer (Prospective Prosumer) and also to draw electricity from the grid to meet the shortfall when sufficient electricity is not produced by the generating plant;
- (p) "Gross Meter" means a unidirectional energy meter installed at the point at which the electricity generated by renewable energy system of prosumer is delivered to the grid of the distribution licensee;
- (q) "Gross-metering" means a mechanism whereby the total renewable energy generated from Grid Interactive Renewable Energy System of a Prosumer and the total energy consumed by the Prosumer are accounted separately through appropriate metering arrangements and for the billing purpose, the total energy consumed by the Prosumer is accounted at the applicable retail tariff and total renewable power generated is accounted for at feed-in tariff determined by the Commission;
- (r) "Group Net Metering" means an arrangement whereby surplus energy is generated and injected from a Renewable Energy System through Net Meter and the exported energy is adjusted in more than one electricity service connection(s) of the same Prosumer either at the same or different premise located within the same Distribution Licensee's area of supply;
- (s) "Government" means the Government of Arunachal Pradesh;
- (t) "Installed Capacity" means the summation of the nameplate capacities expressed in kWp of all the units of the Renewable Energy system or the capacity of the Renewable Energy system reckoned at the output terminals, approved by the Commission;
- (u) "Interconnection Point" means the interface of the Renewable Energy generating facility with the network of distribution licensees and the Interconnection Point for such facility shall be the outgoing terminals of the meter, if the meter is fixed after the Distribution Licensee's cut-outs/ switchgear in the premises of the Prosumer and the Distribution Licensee's cut-outs/switchgear, if the meter is fixed before the Distribution Licensee's cut-outs/switchgear;
- (v) "Invoice" means either a Monthly Bill/Supplementary Bill or a Monthly Invoice/ Supplementary Invoice raised by the distribution licensee;
- (w) "kWp" means kilo Watt peak;
- (x) "Net-billing or net feed-in" means a single bidirectional energy meter used for net-billing or net feed-in at the point of supply wherein the energy imported from the Grid and energy exported from Grid Interactive Renewable Energy system of a Prosumer are valued at two different tariffs, where –
 - (i) The monetary value of the imported energy is based on the applicable retail tariff;
 - (ii) The monetary value of the exported renewable energy is based on feed-in tariff determined by the Commission;

- (iii) The monetary value of the exported energy is deducted from the monetary value of the imported energy to arrive at the net amount to be billed (or credited/carry-over);
- (y) "Net-meter" means a bi-directional energy meter capable of recording both import and export of electricity or a pair of meters one each for recordings the import and export of electricity as the case may be which shall be an integral part of the net metering system;
- (z) "Net Metering" means a mechanism whereby renewable energy exported to the Grid from Grid Interactive Renewable Energy System of a Prosumer is deducted from energy imported from the Grid in units (kWh) to arrive at the net imported or exported energy and the net energy import or export is billed or credited or carried-over by the distribution licensee on the basis of the applicable retail tariff by using a single bidirectional energy meter for net-metering at the point of supply;
- (aa) "Obligated Entity" means the entity mandated under clause (e) of sub-section (1) of Section 86 of the Act to fulfil the renewable purchase obligation and identified under Renewable Power Purchase Obligations and its Compliance-2012 and as amended up to date;
- (bb) "Ombudsman" means the person appointed in accordance with Section 42 (6) read with Section 181 of the Act;
- (cc) "Open Access Consumer" means a person permitted to use an Intra-State Transmission System and /or Distribution System to receive a supply of electricity from a person other than the Distribution Licensee of his area of supply, and the expression includes a Generating Company and a Licensee, who has availed of or intends to avail of Open Access;
- (dd) "Point of Supply" means the point at which a consumer is supplied electricity from the Distribution Licencee;
- (ee) "Project Developer" means the developer of the RE Project, who shall develop such a project on his own premises or on premises taken on lease or rent;
- (ff) "Premises" means rooftops or/and elevated areas on the land, building or infrastructure or part or combination thereof in respect of which a separate meter or metering arrangements have been made by the licensee for supply of electricity;
- (gg) "Prosumer" means a consumer who consumes electricity from the grid and can also inject electricity into the grid generated from distributed renewable energy system installed in the consumer's premises, using the same point of supply and also consume electricity from the same distributed renewable energy system to offset all or part or no part of the consumer's own electrical requirements, given that such systems can be self-owned or third party owned;
- (hh) "Renewable energy" means the grid quality electricity generated from renewable energy sources, including a combination of such sources;
- (ii) "Renewable Energy Certificate (REC)" means the certificate issued in accordance with the procedures approved by the Central Electricity Regulatory Commission.

Provided that the distribution licensee may act as a RESCO. However, this business shall be treated as other business of the distribution licensee;

- (jj) "Renewable Energy sources" means the renewable sources or combination of such sources, such as Mini, Micro and Small Hydro, Wind, Solar, Biomass including bagasse, bio-fuel, urban or Municipal Solid Waste as defined by the Ministry of New and Renewable Energy, Government of India or any other agency as may be notified by the Government/Commission;
- (kk) "Settlement period" means the period beginning from first of April in an English calendar year and ending with the thirty first of the March of the next year;
- (ll) "State Nodal Agency" or "SNA" means an entity in the State, designated by the State Government to act as the agency to deal with issues related to coordinated development of renewable energy; subsidy approval and disbursement to persons developing distributed energy projects, etc.
- (mm) "Tariff Order" in respect of a licensee means the most recent order issued by the Commission for that licensee indicating the rates to be charged by the licensee from various categories of consumers for supply of electrical energy and services;
- (nn) "Third party owner" means a developer who is generating renewable energy on a premises not owned by him but on a prosumer's premises by entering into a lease/commercial agreement with the owner of the premises;
- (oo) "Virtual Net Metering" means an arrangement whereby entire energy generated from a renewable energy generation project installed at Prosumer premise or any other location is injected through Renewable Energy Meter and the energy exported is adjusted in either one or more than one electricity service connection(s) of participating Prosumer(s) located within the same Distribution Licensee's area of supply;

2.2. All other words and expressions used in these Regulations although not specifically defined herein above, but defined in the Act, shall have the meaning assigned to them in the Act. The other words and expressions used herein but not specifically defined in these Regulations or in the Act but defined under any law passed by the Parliament applicable to the electricity industry in the State shall have the meaning assigned to them in such law.

3. Scope and Application

- 3.1. These Regulations shall apply to the distribution licensee and consumers of electricity of distribution licensee of the State of Arunachal Pradesh.
- 3.2. The Prosumer may install the grid connected renewable energy system under Net Metering including Group Net Metering and Virtual Net Metering or Net-Billing/ Net Feed-In or Gross Metering arrangement which,
 - (a) shall be within the permissible rated capacity as defined under these Regulations,
 - (b) shall be located in the consumer premises,
 - (c) shall interconnect and operate safely in parallel with the distribution licensee network,
- 3.3. These regulations do not preclude the right of relevant state authorities to undertake Renewable Energy projects above 1 MW capacity through alternative mechanisms.

4. General Principles

- 4.1. The distribution licensee shall offer the provision of net or gross metering arrangement to the prosumer, who intends to install grid connected grid connected renewable energy system, in its area of supply on non-discriminatory and first come first serve basis.

Provided that the distribution licensee shall offer the provision of net or gross metering to the consumer for the target capacity as specified under these Regulations.

Provided further that the consumer is eligible to install the grid connected renewable energy system of the rated capacity as specified under these Regulations.

- 4.2. Provided also that the interconnection of such system with the grid is undertaken as specified under these Regulations and the relevant technical standards notified by the CEA for connectivity with the grid.

5. Capacity Targets for Distribution Licencee

- 5.1. The distribution licensee shall provide Net Metering including Group Net Metering and Virtual Net Metering or Net-Billing/ Net Feed-In or Gross Metering arrangement to prosumers as long as the total capacity (in MW) does not exceed the target capacity determined by Commission.

A maximum cumulative capacity of 50 MW shall be allowed to prosumers under Net Metering including Group Net Metering and Virtual Net Metering or Net-Billing/ Net Feed-In or Gross Metering arrangement, in the area of supply of the distribution licensee. This target shall be reviewed by the Commission time to time.

- 5.2. Capacity of Transformer: The cumulative capacity to be allowed at a particular distribution transformer shall not exceed 80% of the capacity of the distribution transformer.

Provided that a Distribution Licensee must monitor the capacity limit of DT in regular basis and shall refuse to connect the new RE system connection or arrangement once DT capacity reaches 80% of its rated capacity.

- 5.3. The distribution licensee shall update distribution transformer level capacity available for connecting grid connected renewable energy systems under Net Metering including Group Net Metering and Virtual Net Metering or Net-Billing/ Net Feed-In or Gross Metering arrangement on yearly basis and shall provide the information on its website as well as to the Commission as per **Annexure 1**.

6. Prosumer and Individual Project Capacity

- 6.1. All prosumers of electricity in the area of supply of the distribution licensee can participate in the Net Metering including Group Net Metering and Virtual Net Metering or Net-Billing/ Net Feed-In or Gross Metering arrangement.
- 6.2. The inter-connecting voltage level of the Grid Interactive System for various capacity ranges shall be as per relevant provision of the Arunachal Pradesh State Electricity Regulatory Commission's Electricity Supply Code Regulations notified by the Commission.
- 6.3. The Prosumer of all categories may set up the Renewable Energy Generating System under the Net Metering Arrangement between 1kW and 500 kW capacity.
- 6.4. The Prosumer of all categories may set up the Renewable Energy Generating System under the Group Net Metering or Virtual Net Metering Arrangement between 1kW and 500 kW capacity.
- 6.5. The Prosumer of all categories may set up the Renewable Energy Generating System under the Net-Billing / Net Feed – In arrangement between 500 kW and 1000 kW (1 MW).

- 6.6. The Prosumer of all categories may set up the Renewable Energy Generating System under the Gross Metering Arrangement between 1 kW and 1000 kW (1 MW).
- 6.7. Provided that the prosumer can opt for only one arrangement i.e., either Net Metering including Group Net Metering and Virtual Net Metering or Net-Billing/ Net Feed-In or Gross Metering arrangement within the same premises, as specified in these Regulations.
- 6.8. The maximum grid connected renewable energy system capacity to be installed at any prosumer premises shall be governed by the eligibility of interconnection with the grid for that prosumer. The maximum capacity of an individual renewable energy system would be equal to the sanctioned load (in Kw) or contract demand (in kVA) of the prosumer.

Provided that the installed capacity of the Distributed Renewable Energy Generating System shall be between 1kW and 1000 kW (1MW).

Provided further that the installed capacity is aligned with the provisions of Arunachal Pradesh Electricity Supply Code Regulation as applicable for permitting consumer connections.

Provided that a variation in the rated capacity of the system within a range of five percent shall be allowed.

- 6.9. Consumers with pending arrears with the Distribution Licensee shall not be eligible for Net Metering including Group Net Metering and Virtual Net Metering or Net-Billing/Net Feed-In or Gross Metering Arrangement under these Regulations.

7. Third Party Owned Renewable Energy System

- 7.1. The distribution licensee shall offer the provision of Net Metering including Group Net Metering and Virtual Net Metering or Net-Billing/ Net Feed-In or Gross Metering arrangement to the prosumer including third party owners, who intends to install grid connected renewable energy system, in its area of supply on non-discriminatory and first come first serve basis.

Provided that in case of gross metering arrangement owned by third party, the third-party owner shall enter into an agreement with the distribution licensee.

- 7.2. In the third party owned Renewable Energy system, the following conditions shall apply: -

- (a) The Consumer may lease out/rent their premises to a Project Developer on a mutual commercial arrangement for setting up Renewable Energy system under Net Metering including Group Net Metering and Virtual Net Metering or Net-Billing/ Net Feed-In or Gross Metering framework. The Consumer will pay the Project Developer for all the energy generated by the Renewable Energy system at a mutually agreed tariff or as agreed between them. The commercial arrangement between the Project Developer and the Prosumer will be submitted to the Distribution Licensee for records and the Distribution Licensee will not have any role in such commercial arrangement. All the provisions of Net Metering including Group Net Metering and Virtual Net Metering or Net-Billing/ Net Feed-In or Gross Metering framework shall be applicable for Renewable Energy system set up by a Project Developer.
- (b) Such Renewable Energy Projects set up under these Regulations shall be exempted from Open Access restrictions and associated charges including distribution loss and ISTS loss.
- (c) The Distribution Licensee/ Nodal Agency may explore other business models that may facilitate the proliferation of Grid connected Renewable Energy system. For any new business model not envisaged in these Regulations, the Commission will approve the framework for such business model based on the specific Petition to be filed in this regard.

8. Interconnection with the Grid Specification, Standards and Safety Requirement

- 8.1. The distribution licensee shall ensure that: -

- (a) The interconnection of the distributed renewable energy system with the distribution system of the licensee conforms to the specification and standards as provided in the Central Electricity Authority (Technical Standards for connectivity of the Distributed Generation Resources) Regulations, 2013 and as amended from time to time.
- (b) The interconnection of the distributed renewable energy system with the distribution system of the licensee conforms to the relevant provisions of the Central Electricity Authority (Measures relating to Safety and Electric Supply), Regulations, 2023, as amended from time to time.
- (c) The installed net meter, gross meter and generation meter conforms to the standards, specifications and accuracy class as provided in the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006, as amended from time to time and are installed in such a way that they are accessible for reading.

- 8.2. The licensee shall, while ascertaining the feasibility and eligibility of interconnecting a Grid Interactive system of a consumer will duly consider conformity of the above mentioned requirement.
- 8.3. The supplier will inform the prosumer the specifications and such other details of the components including the meter and the protective devices required to be installed alongwith the distributed renewable energy system.
- 8.4. Renewable Energy generation with Net Metering including Group Net Metering and Virtual Net Metering or Net-Billing/ Net Feed-In or Gross Metering arrangement will be allowed for all the prosumers of the Distribution Licensee under the jurisdiction of the Commission with/without battery back-up support.

Provided that, if a Prosumer opts for connectivity with a battery back-up, the inverter shall have a separate back-up wiring to prevent the battery/ decentralized generation (DG) power from flowing into the grid in the absence of grid supply, and that an automatic as well as manual isolation switch shall also be provided.

- 8.5. Provided further that the Inverter shall comply with the Standards prescribed in **Annexure 2**.
- 8.6. The prosumer shall be responsible for the safe operation, maintenance and rectification of any defect in the Renewable Energy system up to the point of Net Meter or Gross Meter, beyond which point such responsibility, including in respect of the Net Meter or Gross Meter, shall be that of the Distribution Licensee.

Provided that the Generation Meter shall be maintained by the Distribution Licensee.

- 8.7. The prosumer shall be solely responsible for any accident to human being/ animals whatsoever (fatal/non-fatal/departmental/non-departmental) that may occur due to back feeding from the Renewable Energy system when the grid supply is off.

Provided that the Distribution Licensee shall have the right to disconnect the Renewable Energy system from its distribution network at any time in the event of any threat of accident or damage from such Project to its distribution system, for maintenance of distribution system so as to avoid any accident or damage to it.

- 8.8. Provided further that the prosumer may use his Renewable Energy system in islanding mode for his own consumption.
- 8.9. The renewable energy system must be capable of detecting an unintended islanding condition. The system must have anti-islanding protection to prevent any feeding into the grid in case of failure of supply of grid. Applicable IEC/IEEE technical standards shall be followed to test islanding prevention measure for grid connected inverters.
- 8.10. Every renewable energy system shall be equipped with an automatic synchronization device.
- 8.11. The inverter shall have the features of filtering out harmonics and other distortions before injecting energy into the system of the distribution licensee. The Total Voltage Harmonic Distortion (THD) shall be within the limits specified in the Indian Electricity Grid Code (IEGC)/IEEE technical standards.
- 8.12. The licensee shall also provide in advance to an interested prospective prosumer a copy of the Net Metering including Group Net Metering and Virtual Net Metering or Net-Billing/ Net Feed-In or Gross Metering Connection Agreement, annexed as **Annexure-3, 4, 5 accordingly** of these Regulations, where 'technical Interconnecting, safety and other requirements' to be fulfilled by the consumer in respect of setting up of such System are incorporated.

- 8.13. The prosumer is to obtain the necessary clearance/approval for commissioning a Grid Interactive System, from the State Electrical Inspectorate, depending on size of Distributed Renewable Energy generator and voltage of supply as required under Regulation 32 and Regulation 43 respectively of the Central Electricity Authority (Measures related to Safety and Electric Supply) Regulations 2023, read with connected/relevant notification of the State Government.

9. **Metering Arrangement**

- 9.1. The metering system shall be as per the Central Electricity Authority (Installation & Operation of Meters) Regulations, 2006, as amended from time to time.
- 9.2. Net Meter or Gross Meter shall be installed at the interconnection points of the prosumers with the network of the distribution licensee.
- 9.3. Generation meter shall be installed at the delivery point of the distributed renewable energy system to measure the total electricity generated from the distributed renewable energy generation system.
- 9.4. The Net Meters shall be of accuracy class 1.0 or better or as per the specifications notified by the competent authority. The generation meters shall be of 0.2s class accuracy and with facility for recording meter readings using Meter Reading Instrument (MRI) or wireless equipment or such other devices including features to record energy with data storage.
- 9.5. The Gross Meter, Generation Meter and Net Meter shall have Advanced Metering Infrastructure (AMI) facility with RS 485 (or higher) communication port or any other advance

communication facility, the facility for downloading meter readings using meter reading instrument (MRI) or wireless equipment or such other devices including features to record energy with data storage.

9.6. Net Meter of the same accuracy class as the Consumer's meter existing before the commissioning of the Renewable Energy system, shall be installed in replacement of existing meter.

Provided that, if the prosumer is within the ambit of Time-of-Day ('ToD') Tariff, the Net Meter installed shall be capable of recording ToD consumption and generation.

Provided further that such Meters may be provided by the Distribution Licensee or the Consumer, subject to the same being from the approved list of the suppliers.

Provided also that if the Meter is installed by the Distribution Licensee, its cost shall be recovered from the Consumer before the COD of the Project.

9.7. Check meter shall be installed for the distributed renewable energy system having capacity more than 20 kW and for the distributed renewable energy system of capacity less than or equal to 20 kW, the check meter would be optional.

Provided that the cost of check meter(s) shall be borne by the prosumer and installed and such meter shall be tested and installed by the Distribution Licensee.

9.8. Supply and installation of meters, action on defective meter, and other matters related to meters shall be as per provisions of the APSEC (Electricity Supply Code Regulations) notified by the Commission from time to time as applicable.

9.9. The meters installed, if arranged by the Prosumer, shall be inspected, verified for the accuracy, tested, installed and sealed by the Distribution Licensee in the presence of the Prosumer or its representative (if he chooses to be present at the time of testing) in accordance with the provisions of Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006, as amended from time to time and APSEC (Electricity Supply Code Regulations) as applicable.

9.10. The meters installed shall be jointly inspected and sealed on behalf of both the parties and shall be tested and installed only in the presence of the representatives of the consumer and the distribution licensee.

9.11. The meter reading taken by the distribution licensee shall form the basis of commercial settlement and a copy of the meter reading statement of the Net Meter or Gross Meter and Generation Meter shall be handed over to the consumer as soon as meter reading is taken.

10. Connection of Meter and Protective Devices

10.1. Two diagrams showing metering and other connecting arrangement of a grid interactive systems without and with battery backup are provided in Annexure 5A and Annexure 5B respectively.

10.2. The diagrams are indicative and subject to modifications to suit site conditions to resolve any technical and commercial difficulty at site. But the safety requirements like provisions of islanding in case of grid failure and isolation of battery power supply when grid is connected should have to be incorporated and such diagram of actual installation indicating all components shall be conspicuously displayed in a SPV plant.

11. Energy Accounting and Settlement

11.1. Net Metering Arrangement

- (a) The accounting of electricity exported from the Renewable Energy system and imported from the Grid by the prosumer shall become effective from the date of connectivity of the Renewable Energy system with the distribution network.
- (b) The Distribution Licensee shall undertake meter reading of both, the Generation Meter and the Net Meter, for all prosumers, according to the regular billing cycle.
- (c) For each billing period, the Distribution Licensee shall show separately:-
 - (i) Quantum of Renewable Energy generation recorded in the Renewable Energy Generation Meter in the billing period, including opening and closing balance
 - (ii) Quantum of electricity Units exported by the prosumer, including opening and closing balance;
 - (iii) Quantum of electricity Units imported by the prosumer, including opening and closing balance;
 - (iv) Net quantum of electricity Units billed for payment by the prosumer;
 - (v) Net quantum of electricity Units carried over (if surplus) to the next billing period;
 - (vi) Units from Renewable Energy generation used by the Distribution Licensee for RPO compliance.
- (d) The energy generated by the Renewable Energy Generating Station shall be offset against the energy consumption of the consumer from the Distribution Licensee in the following manner: -
 - (i) If the quantum of electricity exported exceeds the quantum imported during the billing period, the excess quantum shall be carried forward to the next billing period as credited Units of electricity.

- (ii) If the quantum of electricity Units imported by the prosumer during any billing period exceeds the quantum exported, the Distribution Licensee shall raise its bill for the net electricity consumption after adjusting the credited Units as per applicable Tariff Order.
- (iii) In case the prosumer is within the ambit of Time of Day (ToD) tariff, the electricity consumption in any time block, i.e., peak hours, off-peak hours, etc., shall be first compensated with the quantum of electricity injected in the same time block.

Provided that any excess injection over and above the consumption in any other time block in a billing cycle shall be accounted as if the excess injection had occurred during off-peak hours.

- (e) The unadjusted net credited Units of electricity as at the end of each financial year shall be considered as units purchased by the Distribution Licensee at Average Power Purchase cost of the concerned Distribution Licensee or Feed-in-Tariff determined for that Year whichever is lower.

Provided that, at the beginning of each Settlement Period, the cumulative quantum of injected electricity carried forward will be re-set to zero.

- (f) The Distribution Licensee shall compute the amount payable to the prosumer, latest by April 30th of the following year for the unadjusted net credited Units purchased by it during the financial year as specified in Regulation 11.1(e), and shall pay the amount to the prosumer by May 31st of the following year.
- (g) The Distribution licensee in addition to consumer tariff shall be eligible to raise bill for any other charges as allowed by the Commission and any tax/duty/cess imposed by the Government.
- (h) The consumer whose entitlement as a consumer of the licensees is ceased or he is not settling his dues to the licensee, shall not be entitled to receive due amount of the adjustment/credit.
- (i) The prosumer shall have recourse, in case of any dispute with the Distribution Licensee regarding billing, to the mechanism specified by the Commission under Sections 42 (5) to (7) of the Act for the redressal of grievances.

11.2. Group Net Metering Arrangement

- (a) Where the export of units during any billing period exceeds the import of units at the connection where the renewable energy generating Project is located, such surplus units injected into the grid shall be adjusted against the energy consumed in the monthly bill of service connection(s) in a sequence indicated in the priority list provided by the Prosumer. The sequence of priority for adjustment shall be deemed to have begun with the service connection where the renewable energy generating Project is located.
- (b) The priority list for adjustment of the balance surplus energy against other electricity connection(s) may be revised by the Prosumer once at the beginning of every financial year with an advance notice of two months.
- (c) The electricity consumption in any time block (e.g., peak hours, off-peak hours, etc.) shall be first compensated with the electricity generation in the similar time blocks in the same billing cycle of the Prosumer where the renewable energy generating Project is located, and any surplus units injected shall be adjusted against the energy consumed in the monthly bill of service connection(s) in a sequence indicated in the priority list provided by the Prosumer, as if the surplus generation/ Energy Credits occurred during the off-peak time block for Time of Day (ToD) Consumers and normal time block for Non-ToD Consumer.
- (d) Where during any billing period, the export of units either in Non-ToD Tariff or ToD Tariff exceeds the import of units by the electricity service connection(s), such surplus units injected by the Prosumer shall be carried forward to the next billing period as energy credit and shown as energy exported by the Consumer for adjustment against the energy consumed in subsequent billing periods within the Settlement Period in the sequence indicated in the priority list.
- (e) For unadjusted net credited Units of electricity at the end of each financial year, the provisions of Clause 11.1 (e) will be applicable for the connection where the renewable energy generating Project is located.

11.3. Virtual Net Metering Arrangement

- (a) The energy generated from the renewable energy generating Project shall be credited in the monthly electricity bill of each participating Prosumer(s) as per the ratio of procurement from renewable energy generating Project indicated under the agreement/MoU entered on a stamp paper by the Prosumer(s) and submitted to the Distribution Licensee.

- (b) The Prosumer(s) shall have the option to change the share of credit of electricity from renewable energy generating Project by submitting a fresh Agreement/MoU on a stamp paper subject to the ratio of procurement from renewable energy generating Project indicated under the agreement/MoU entered by the Prosumer(s) once at the beginning of the financial year with an advance notice of two months.
- (c) Where the service connection of any participating Prosumer(s) is disconnected due to any reason under any law for the time being in force, the unadjusted units/remaining credits of that Prosumer shall be paid by the Distribution Licensee at the end of the financial year.
- (d) The electricity consumption in any time block (e.g., peak hours, off-peak hours, etc.) shall be first compensated with the electricity generation in the similar time blocks in the same billing cycle of the participating Prosumer(s). Any surplus generation over consumption in any time block in a billing cycle shall be accounted as if the surplus generation/ Energy Credits occurred during the off-peak time block.
- (e) Where the units credited during any billing period of any participating Prosumer exceeds the import of units by that Prosumer, such surplus credited units shall be carried forward in the next billing period as energy credits for adjustment against the energy consumed in subsequent billing periods within the settlement period of each participating Consumer(s).
- (f) For unadjusted net credited Units of electricity at the end of each financial year, the provisions of Clause 11.1 (e) will be applicable for each participating Consumer(s).

11.4. Net Billing or Net Feed – In Arrangement

- (a) Net billing is the arrangement where the Renewable Energy Generating system is:
 - (i) Connected on the consumer side of the Net Meter,
 - (ii) Selling excess power after meeting own requirement (export of power) to a Distribution Licensee at feed –in tariff approved by the Commission,
 - (iii) Import of power if any from the distribution licensee shall be charged as per applicable Tariff Order.
- (b) The Distribution Licensee shall undertake meter reading of both, the Renewable Energy Generation Meter and the Net Meter, as applicable, according to the regular billing cycle.
- (c) For each Billing Period, the Distribution Licensee shall make the following information available on its bill to the Prosumer:
 - (i) Quantum of Renewable Energy generation recorded in the Renewable Energy Generation Meter, including opening and closing balance;
 - (ii) Quantum of electricity units exported to the grid by the prosumer in the billing period, including opening and closing balance;
 - (iii) Quantum of electricity units imported from grid by the prosumer in the billing period, including opening and closing balance;
 - (iv) Amount of billing credit, if any, in the billing period, including opening and closing balance;
 - (v) Units from Renewable Energy generation used by the Distribution Licensee for RPO compliance.
- (d) The Distribution Licensee shall raise net bill as per the billing cycle after accounting for the units exported by the Renewable Power Developer at Feed – In Tariff approved by the Commission and after accounting for units imported from grid at applicable Tariff Order.
- (e) The Distribution Licensee shall raise bill on the prosumer in accordance with the following equation:

$$\text{Energy Bill of consumer} = \text{Fixed Charges} + \text{other applicable charges and levies} + (E_{DL} \times T_{RST}) - (E_{RE} \times T_{PPA}) - \text{Billing Credit (Carried forward from last billing cycle)};$$

Where:

- (i) Fixed Charges means the Fixed/Demand Charges as applicable to the consumer category as per the applicable retail supply Tariff Order;
- (ii) Other applicable charges and levies mean any other charges such as duty, cess, etc.;
- (iii) E_{DL} means the imported energy units from the Distribution Licensee as recorded by in the bidirectional meter for the billing period;
- (iv) T_{RST} means the applicable retail supply tariff of the concerned consumer category as per the applicable Tariff Order of the Commission;
- (v) E_{RE} means the export energy units recorded for the billing period by the bidirectional

meter;

- (vi) T_{PPA} means the feed-in tariff approved by the Commission as per the Agreement entered between the Consumer and Distribution Licensee, in accordance with Regulation 16;
- (vii) **Billing Credit** is the amount by which the value of exported Renewable Energy generation in a particular month is more than the value of imported units from the distribution licensee including all other components of consumer bill.
- (f) In case the consumer is subjected to time-of-day tariffs, energy bill ($E_{DL} \times T_{RST}$) shall be computed accordingly.
- (g) In case $(E_{RE} * T_{PPA})$ is more than {Fixed charges + other applicable charges and levies + $(E_{DL} \times T_{RST})$ }, utility shall give credit of amount equal to difference (Billing Credit), which shall be carried forward to the next billing cycle. No interest shall be payable by Distribution Licensee on such credit amount carried forward.
- (h) The net bill amount for a billing period, if payable by the prosumer, then the same shall be paid by the prosumer within the due date of the bill.
- (i) At the end of each Financial Year, any amount payable by Distribution Licensee remaining unadjusted during the financial year shall be paid to the prosumer latest by the end of May of following Financial Year.
- (j) The prosumer whose entitlement as a consumer of the licensees is ceased or he is not settling his dues with the licensee, shall not be entitled to receive due amount of the adjustment/credit.
- (k) The prosumer shall have recourse, in case of any dispute with the Distribution Licensee regarding billing, to the mechanism specified by the Commission under Sections 42 (5) to (7) of the Act for the redressal of grievances.

11.5. Gross Metering Arrangement

- (a) The Distribution Licensee shall undertake meter reading of both, the Renewable Energy Generation Meter and the Consumer Meter for all prosumers, according to the regular billing cycle.
- (b) For each billing period, the distribution licensee shall make the following information available on its bill to the prosumer:
 - (i) Quantum of Renewable Energy generation recorded in the Renewable Energy Generation Meter, including opening and closing balance;
 - (ii) Quantum of electricity units consumed from grid by the prosumer in the billing period, including opening and closing balance;
 - (iii) Units from Renewable Energy generation used by the Distribution Licensee for RPO compliance
- (c) The energy accounting and settlement procedure for consumers installing and operating Renewable Energy system under gross metering arrangement shall be as per the following procedure:
 - (i) For each billing period, the Licensee shall show the quantum of electricity injected by Renewable Energy System installed at the premises of the prosumer in the billing period.
 - (ii) The Distribution Licensee shall reimburse the prosumer for the quantum of injected electricity by the Renewable Energy System during the billing period at the Feed-in-Tariff determined by the Commission for that year.

Provided further that, the above Tariff shall be applicable for the entire duration of the Agreement.

 - (iii) For each billing period, the Licensee shall show the quantum of electricity consumed from the grid by the prosumer in the billing period.
 - (iv) The Distribution Licensee shall prepare the bill for energy consumed from the grid as per the Tariff Order approved by the Commission including fixed Charges/ Demand Charges and other applicable charges and levies as applicable to the consumer category as per the applicable Tariff Order;
 - (v) The Distribution licensee shall prepare the net bill according to the amount payable by the licensee to the prosumer and amount payable by the prosumer to the licensee for the energy consumed from the grid.
 - (vi) The net amount payable by the licensee or the prosumer, as the case may be, shall be paid within the due date mentioned in the bill.
- (d) The prosumer whose entitlement as a consumer of the licensees is ceased or he is not settling his dues with the licensee, shall not be entitled to receive due amount.

(e) The prosumer shall have recourse, in case of any dispute with the Distribution Licensee regarding billing, to the mechanism specified by the Commission under Sections 42(5) to (7) of the Act for the redressal of grievances.

12. Renewable Purchase Obligation (RPO)

12.1. The quantum of electricity generated from the Renewable Energy Project of an eligible prosumer under Net Metering including Group Net Metering and Virtual Net Metering or Net-Billing/ Net Feed-In or Gross Metering arrangement and consumed by him, shall qualify for accounting towards the Renewable Purchase Obligation (RPO) of such prosumer if he is an obligated entity under APSEC (Renewable Purchase Obligation and its Compliance) Regulation as applicable.

12.2. The Distribution Licensee shall, with the consent of the prosumer, make all the necessary arrangements, including for additional metering, as may be required for the accounting of the Renewable Energy generated and consumed by the prosumer.

(a) **Net Metering including Group Net Metering and Virtual Net Metering:** The quantum of electricity consumed by the prosumer from the Renewable Energy Project owned and installed under the Net Metering arrangement shall, if such prosumer is not an Obligated Entity, qualify towards meeting the RPO of the Distribution Licensee under APSEC (Renewable Purchase Obligation and its Compliance) as applicable.

Provided that the unadjusted net credited Units of Renewable Energy purchased by the Distribution Licensee under the provisions of Regulation 11.1 (e) above, shall also qualify towards meeting its RPO.

(b) **Net Billing / Net Feed- in:** The quantum of electricity consumed by prosumer, who is not defined as obligated entity, from the Renewable Energy Project under net billing/ net feed-in arrangement shall qualify towards compliance of Renewable Purchase Obligation for the distribution licensee under APSEC (Renewable Purchase Obligation and its Compliance) as applicable.

(c) **Gross Metering:** the quantum of electricity from the Renewable Energy Project under gross-metering arrangement, sold to the third party (other than the licensee) who is not defined as obligated entity, shall also qualify towards compliance of Renewable purchase Obligation (RPO) for the distribution licensee under APSEC (Renewable Purchase Obligation and its Compliance) as applicable.

13. Applicability of Open Access

13.1. The distribution licensee shall not allow non-discriminatory open access to grid connected renewable energy producer under Net Metering including Group Net Metering and Virtual Net Metering or Net-Billing/ Net Feed-In or Gross Metering arrangement, whether self-owned or third party owned, in the event of sale of power to the third party or to a captive generator.

14. Applicability of other Charges

14.1. The distributed renewable energy generation system under Net Metering including Group Net Metering and Virtual Net Metering or Net-Billing/ Net Feed-In or Gross Metering arrangement, whether self-owned or third party owned installed on prosumer premises, shall be exempted from banking, wheeling and cross subsidy surcharges.

Provided that banking shall be defined as per the relevant Regulations notified by the Commission.

15. Eligibility to Participate under Renewable Energy Certificate Mechanism

15.1. The issuance of renewable energy certificate shall be as per the eligibility criteria specified under Central Electricity Regulatory Commission (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2022 and subsequent amendments thereof.

16. Procedure for Application and Approval

16.1. The distribution licensee shall facilitate the process for setting up of RE generation system at prosumers' premises. In this regard, the licensee shall-

(a) Create an online portal for receiving applications from prosumers for installation, interconnection and metering of distributed renewable energy systems or devices at their premises, and update the same on a regular basis;

(b) Prominently display on its website and in all its offices, the following; namely: -

(i) Detailed standardized procedure for installation and commissioning of grid connected renewable energy system;

(ii) A single point of contact to facilitate the consumers in installation of grid connected renewable energy system from submission of application form to commissioning.

- (iii) Address and telephone numbers of offices where filled-up application forms can be submitted;
- (iv) Complete list of documents required to be furnished along with such applications;
- (v) Applicable charges to be deposited by the applicant;
- (vi) Empanelled list of service providers for the benefit of consumers who want to install grid connected renewable energy system through service providers;
- (vii) Financial incentives to the prosumers, as applicable under various schemes and programs of the Central and State Governments;
- (viii) Formats of connection agreement and installation certificate.

16.2. The distribution licensee shall ensure that-

- (a) The Distribution licensee shall make the form available on its website and through a hard copy at its local offices.
- (b) Application forms shall be accepted online or through hard copy;
- (c) In case the application form submitted in hard copy form (Annexure-6), the same shall be scanned and uploaded on the website as soon as it is received and acknowledgement with the registration number for that application shall be generated and intimated to the applicant;
- (d) In case the application form received online through web portal of the distribution licensee, the acknowledgement with the registration number shall be generated on submission of application;
- (e) Application shall be deemed to be received on the date of generation of acknowledgement with registration number;
- (f) The application tracking mechanism based on the unique registration number shall be provided by the distribution licensee through web-based application or any other mode to monitor the status of processing of the application like receipt of application, site inspection, meter installation and commissioning, etc.

16.3. The Distribution licensee shall make the form available on its website and through a hard copy at its local offices.

16.4. The consumer (Prospective Prosumer) of the premises shall submit the application to connect its Renewable Energy system to the distribution system of the licensee in the specified form as Annexure-6 to the Regulation along with a processing fee ₹ 500 (Rupees five hundred only) at the local office of the concerned Distribution licensee or online through Web portal of Distribution Licensees.

16.5. In case, the application form is submitted in hard copy, it will be received, and acknowledgement with the registration number for that application shall be generated. The same shall be scanned and uploaded on the website as soon as it is received. In case, the application form is received online through web portal of the distribution licensee, the acknowledgement with the registration number shall be generated on submission of application. Application shall be deemed to be received on the date of generation of acknowledgement with registration number; and the application tracking mechanism based on the unique registration number shall be provided by the distribution licensee through a web-based application or any other mode to monitor the status of the processing of the application like receipt of the application, site inspection, meter installation, and commissioning, etc.

16.6. Within Fifteen (15) days, the licensee shall complete the technical feasibility study and shall communicate to the applicant through email/SMS/post, the sanction /rejection of the application, as the case may be, along with the estimated amount to be deposited and the copy of the agreement to be executed by the Consumer (Prospective Prosumer).
Provided that the applications for setting up of RE generation system up to 10 kW capacity, complete in all respects shall be deemed to have been accepted without requiring technical feasibility study and any commensurate enhancement of the sanctioned load of the consumer, as may be required, shall be carried out by the distribution licensee.

16.7. On receipt of full payment, the Distribution Licensee shall approve the application and intimate the same to the applicant by providing a Letter of Approval (LoA) via email/SMS/post, within thirty (30) days from the issuance of acknowledgement of the application.

16.8. During the time period from the feasibility study till the completion of installation, in case, there is any requirement of up gradation of distribution infrastructure like augmentation of the service line, distribution transformer capacity, and the like for installation of the required capacity of Renewable Energy system, the same shall be carried out by the distribution licensee or consumer, as the case may be.

16.9. After installation of the Renewable Energy system, the prosumer shall submit the installation certificate to the distribution licensee. The licensee shall complete the signing

of the connection agreement (Annexure 3, Annexure 4, Annexure 5), installation of the meter, and successful commissioning of the Renewable Energy system within Fifteen (15) days from the date of submission of the installation certificate. Formats of connection agreement and installation certificate shall be placed on the web portal of the distribution licensee within thirty days of notification of these Regulations.

- 16.10. The Prosumer shall have the option of purchasing the requisite meter himself which shall be tested and installed by the distribution licensee.
- 16.11. The timelines as specified above in these Regulations shall be adhered to by the distribution licensee. In case of delay, the licensee may take approval from the Commission in specific cases along with justification for the same.
- 16.12. In case of any delay on the part of the distribution licensee without any just cause, the Licensee shall be liable to pay compensation to the consumer at a rate of ₹100 (Rupees one hundred only) per day for each day of default.
- 16.13. The distribution licensee shall pass on the financial incentives to the prosumers, as may be provided under various schemes and programs of the Central and State Governments.
- 16.14. In case of any billing dispute, the prosumer may approach to the Electricity Consumer Grievance Redressal Forum of the concerned Distribution licensee.

17. Agreement

- 17.1. The Distribution Licensee and Prosumer shall enter into a Net Metering including Group Net Metering and Virtual Net Metering or Net-Billing/ Net Feed-In or Gross Metering Connection Agreement, as the case may be, after approval of connectivity of the Renewable Energy Generating System with the distribution Network but before the start of actual generation from the System. The model connection agreements for Net Metering, Net Billing and Gross Metering Arrangement is provided as Annexure 3, Annexure 4 and Annexure 5 respectively.

18. Overriding Effect Not Withstanding Anything Contained in the contrary:

- (a) APSEC Renewable Purchase Obligation and its Compliance Regulation;
- (b) APSEC Electricity Supply Code Regulations;
- (c) APSEC Standard of Performance Regulations;

Framed and notified by the Commission under Section 181 of the Electricity Act. 2003, these regulations will have overriding effect in respect of Grid Interactive Distributed Renewable Energy System.

19. Penalty or Compensation

- 19.1. In case of failure of any metering system, the provisions of penalty or compensation shall be as per the provisions of the APSEC Standard of Performance Regulations for Distribution Licensee as applicable.
- 19.2. In case of failure to meet the timelines prescribed under these Regulations, the distribution licensee shall be liable to pay compensation to the consumer as specified under Regulation 16.12 above.

20. Late Payment Surcharge

- 20.1. In case the payment by the Distribution Licensee under Regulation 11 is delayed beyond 31st of May of that year, a Late Payment Surcharge at the rate of 1.25% per month from the delay beyond 31st May shall be levied on the Distribution Licensee.

21. Power to Remove Difficulties

- 21.1. If any difficulty arises in giving effect to any of the provisions of these regulations, the Commission may, either *Suo Motu* or on an application made to it, by general or special order, direct the licensee/generator or any other person to take suitable action, not being inconsistent with the Act, which appears to the Commission to be necessary or expedient for the purpose of removing the difficulty.

22. Power to Give Directions

- 22.1. The Commission may from time to time issue such directions and orders as considered appropriate for the implementation of these Regulations.

23. Power to Relax

- 23.1. The Commission may by general or special order, for reasons to be recorded in writing and after giving an opportunity of hearing to the parties likely to be affected may relax any of the provisions of these Regulations on its own motion or on an application made before it by an interested person.

24. Power to Amend

24.1. The Commission may from time to time add, vary alter, suspend, modify, amend or repeal any provisions of these Regulations by general or special order for reasons to be recorded in writing.

25. Saving of Inherent Powers of the Commission

25.1. Nothing contained in these Regulations shall limit or otherwise affect the inherent powers of the Commission to adopt a procedure, which is at variance with any of the provisions of these regulations, if the Commission, in view of the special circumstances of the matter or class of matters and for reasons to be recorded in writing, deems if necessary or expedient to depart from the procedure specified in these regulations.

26. Interpretation

26.1. All issues arising in relation to interpretation of these regulations shall be determined by the Commission and the decision of the Commission on such issues shall be final.

27. Repeal and Savings:

27.1. Save as otherwise provided in these regulations, the Arunachal Pradesh State Electricity Regulatory Commission (Rooftop Solar Grid Interactive Systems Based On Net Metering) Regulations, 2016 and all subsequent amendments thereof shall stand repealed from the date of commencement of these Regulations.

By Order of the Commission.

Secretary, APSERC

Annexure 1 : Distribution Transformer wise Capacity**Distribution Transformer-wise capacity****Details (To be updated on yearly basis)**

Details as on: DD/MM/YYYY

Transformer Code	Location of Transformer	Name Plate Capacity (kVA)	Peak Load during last Financial Year (kVA)	Peak Load during last Quarter	Cumulative capacity of connected RE Generating System (kW/kVA)

Annexure 2: Voltage level Harmonics, Standards: Harmonics & Inverter

Harmonics shall be as per IEEE 519 Standards. The permissible individual harmonics level shall be less than 3% (for both voltage and current harmonics) and Total Harmonics Distortion (THD) for both voltage and current harmonics of the Grid system shall be less than 5%.

Inverter Standards

Inverter should comply with IEC 61683/IS 61683 for efficiency and Measurements and should comply IEC 60068-2 (1, 2, 14, 30) / Equivalent BIS Standard for environmental testing. Inverter should supervise the grid condition continuously and in the event of grid failure (or) under voltage (or) over voltage, Renewable Energy Plant should be disconnected by the circuit Breaker/Auto switch provided in the Inverter.

Various Other Standards			
Sl. No.	Parameter	Reference	Requirements
1.	Overall conditions of Service	State Distribution/Supply Code	State Distribution/Supply Code
2.	Overall Grid Standards	Central Electricity Authority (Grid Standard) Regulations, 2010	Central Electricity Authority (Grid Standard) Regulations, 2010
3.	Equipment	BIS/IEC/IEEE	BIS/IEC/IEEE
4.	Meters	Central Electricity Authority (Installation and operation of meters) Regulation, 2006 as amended time to time	Central Electricity Authority (Installation & operation of meters) Regulation, 2006 as amended time to time
5.	Safety and supply	Central Electricity Authority (Measures relating to Safety and Electricity Supply) Regulations, 2023	Central Electricity Authority (Measures relating to Safety and Electricity Supply) Regulations, 2023
6.	Harmonic Requirements Harmonic Current	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations,	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013.

Various Other Standards			
SI. No.	Parameter	Reference	Requirements
		2013.	
7.	Synchronization	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013	Solar Plant must be equipped with a grid frequency synchronization device. Every time the generating station is synchronized to the electricity system. It shall not cause voltage fluctuation greater than +/- 5% at the point of connection.
8.	Voltage	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013	The voltage- operating window should minimize nuisance tripping and should be under operating range of 80% to 110% of the nominal connected voltage. Beyond a clearing time of 2 second, the Solar Plant must isolate it self from the grid.
9.	Flicker	IEEE519 CEA(Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	Operation of Solar Plant should not cause voltage flicker in excess of the limits stated in IEC 61000 standards or other equivalent Indian standards, if any.
10.	Frequency	IEEE 519 CEA(Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013	When the Distribution system frequency deviates outside the specified conditions (50.5 Hz on upper side and 47.5 Hz on lower side), There should be over and under frequency trip functions with a clearing time of 0.2 seconds.
11.	DC injection	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013	Should not inject DC power more than 0.5% of full rated output at the inter connection point or 1% of rated inverter output current into distribution system under any operating condition.
12.	Power Factor	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	While the output of the inverter is greater than 50%, a lagging power factor of greater than 0.9 should operate.
13.	Islanding and Disconnection	IEEE519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013	The Solar Project in the event of fault, voltage or frequency variations must island/disconnect itself within IEC standard on stipulated period.
14.	Overload and Overheat	IEEE519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013	The inverter should have the facility to automatically switch off in case of overload or overheating and should restart when normal conditions are restored.

Various Other Standards			
Sl. No.	Parameter	Reference	Requirements
15.	Paralleling Device	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013	Paralleling device of Solar System shall be capable of withstanding 220% of the normal voltage at the interconnection point.
16.	Note: The standards/specifications shall be subject to amendments/revisions from time to time by the Distribution Licensee and the State Agency on respective websites.		

ANNEXURE 3: Model Net Metering Connection Agreement

This Agreement is made and entered into at (location) _____ on this (date) _____ day of (month) _____ (year) _____ between the Prosumer (Name) _____ having premises at (address) _____ and Consumer No. _____ as the first Party of this agreement,

AND

The Distribution Licensee _____ (hereinafter referred to as 'the Licensee) and having its Registered Office at (address) _____ as second Party of this Agreement;

Whereas, the Prosumer has applied to the Licensee for approval of a Net Metering Arrangement under the provisions of the Arunachal Pradesh Electricity Regulatory Commission (Grid Interactive Distributed Renewable Energy system with Net Metering, Net Billing/Net Feed-In, Gross Metering and its related matters) Regulations, 2024 and subsequent amendment thereof (herein after referred to as 'the Net Metering Regulations') and sought its connectivity to the Licensee's Distribution Network;

And whereas, the Licensee has agreed to provide Network connectivity to the Prosumer for injection of electricity generated from its Renewable Energy system of _____ kW;

Both Parties hereby agree as follows:-

1. Eligibility

- 1.1. The Renewable Energy Project meets the applicable norms for being integrated into the Distribution Network, and that the Prosumer shall maintain the Project accordingly for the duration of this Agreement.

2. Technical and Inter-Connection Requirements

- 2.1. The metering arrangement and the inter-connection of the Renewable Energy Project with the network of the Licensee shall be as per the provisions of the aforesaid Regulations and the technical standards and norms specified by the Central Electricity Authority for connectivity of distributed generation resources and for the installation and operation of meters.
- 2.2. Renewable Energy generation plant under Net Metering system will conform to the standards and requirements specified in aforesaid Regulations and in the following Regulations and codes as amended from time to time:
 - (i) Central Electricity Authority (Technical Standards for connectivity of the Distributed Generating Resources) Regulations, 2013 and subsequent amendments thereof;
 - (ii) Central Electricity Authority (Installation and Operation of Meters) Regulation, 2006 and subsequent amendments thereof;
 - (iii) Central Electricity Authority (Measures of Safety and Electricity Supply) Regulations, 2023 and subsequent amendments thereof;
 - (iv) Grid Code Regulations framed by the Commission;
 - (v) Supply Code Regulations framed by the Commission;
 - (vi) Any other provisions applicable to the electricity consumer of the Distribution Licensee.

2.3. The Prosumer agrees, that he shall install, prior to connection of the Renewable Energy Project to the network of the Licensee, an isolation device (both automatic and in built within inverter and external manual relays) and the Licensee shall have access to it if required for the repair and maintenance of the Distribution Network.

2.4. The Licensee shall specify the interface/inter-connection point and metering point.

2.5. The Prosumer shall furnish all relevant data, such as voltage, frequency, circuit breaker, isolator position in his System, as and when required by the Licensee.

3. Safety

3.1. The equipment connected to the Licensee's Distribution System shall be compliant with relevant International (IEEE/IEC) or Indian Standards (BIS), as the case may be, and the installation of electrical equipment shall comply with the requirements specified by the Central Electricity Authority regarding safety and electricity supply.

3.2. The design, installation, maintenance and operation of the Renewable Energy Project shall be undertaken in a manner conducive to the safety of the Renewable Energy Project as well as the Licensee's Network.

3.3. If, at any time, the Licensee determines that the Prosumer's Renewable Energy Project is causing or may cause damage to and/or results in the Licensee's other Consumers or its assets, the Prosumer shall disconnect the Renewable Energy Project from the distribution network upon direction from the Licensee, and shall undertake corrective measures at his own expense prior to re-connection.

3.4. The Licensee shall not be responsible for any accident resulting in injury to human beings or animals or damage to property that may occur due to back- feeding from the Renewable Energy Project when the grid supply is off. The Licensee may disconnect the installation at any time in the event of such exigencies to prevent such accident.

4. Other Clearances and Approvals

The Prosumer shall obtain any statutory approvals and clearances that may be required, such as from the Electrical Inspector or the municipal or other authorities, before connecting the Renewable Energy Project to the distribution Network.

5. Period of Agreement and Termination

This Agreement shall be for a period for 20 years, but may be terminated prematurely,

(a) By mutual consent; or

(b) By the Prosumer, by giving 30 days' notice to the Licensee;

(c) By the Licensee, by giving 30 days' notice, if the Prosumer breaches any terms of this Agreement or the provisions of the Net Metering Regulations and does not remedy such breach within 30 days, or such other reasonable period as may be provided, of receiving notice of such breach, or for any other valid reason communicated by the Licensee in writing.

6. Access and Disconnection

6.1. The Prosumer shall provide access to the Licensee to the metering equipment and disconnecting devices of Renewable Energy Project, both automatic and manual, by the Prosumer.

6.2. If, in an emergent or outage situation, the Licensee cannot access the disconnecting devices of the Renewable Energy Project, both automatic and manual, it may disconnect power supply to the premises.

6.3. Upon termination of this Agreement under Clause 5, the Prosumer shall disconnect the Renewable Energy Project forthwith from the Network of the Licensee.

7. Liabilities

7.1. The Parties shall indemnify each other for damages or adverse effects of either Party's negligence or misconduct during the installation of the Renewable Energy Project, connectivity with the distribution network and operation of the System.

7.2. The Parties shall not be liable to each other for any loss of profits or revenues, business interruption losses, loss of contract or good will, or for indirect, consequential, incidental or special damages including, but not limited to, punitive or exemplary damages, whether any of these liabilities, losses or damages arise in contract, or otherwise.

8. Commercial Settlement

8.1. The commercial settlements under this Agreement shall be in accordance with the Net Metering Regulations.

8.2. The Licensee shall not be liable to compensate the Prosumer if his Renewable Energy Project is unable to inject surplus power generated in to the Licensee's Network on account of failure of power supply in the grid/Network.

- 8.3. The existing metering System, if not in accordance with the Net Metering Regulations, shall be replaced by bi-directional meter (whole current/CT operated), and a separate generation meter may be provided to measure Renewable Energy generation. The bi-directional meter (whole current/CT operated) shall be installed at the inter-connection point to the Licensee's Network for recording export and import of energy.
- 8.4. The unidirectional and bi-directional meters shall be fixed in separate meter boxes in the same proximity.
- 8.5. The Licensee shall issue monthly electricity bill for the net metered energy on the scheduled date of meter reading. If the exported energy exceeds the imported energy, the Licensee shall show the net energy exported as credited units of electricity as specified in the Net Metering Regulations. If the exported energy is less than the imported energy, the Prosumer shall pay the Distribution Licensee for the net energy imported at the prevailing tariff approved by the Commission for the Consumer category to which he belongs.

9. Connection Costs

- 9.1. The Prosumer shall bear all costs related to the setting up of the Renewable Energy Project, excluding the Net Metering Arrangement cost beyond the Net Meter.

10. Dispute Resolution

- 10.1. Any dispute arising under this Agreement shall be resolved promptly, in good faith and in an equitable manner by both the Parties.
- 10.2. Disputes pertaining to billing/payments and metering shall be referred to the Consumer Grievances Redressal Forum (CGRF) and then to the Ombudsman appointed under sub-section 6 of Section 42 of the Act for settlement in case the same is not resolved at CGRF.

In the witness, where of (Name) _____ for and on behalf of Prosumer and

(Name) _____ for and on behalf of (Licensee) agree to this agreement.

Prosumer/ Third Party

Name:

Address:

Service Connection No.

Distribution Licensee

Name:

Designation:

Office Address.

Annexure 4: Model Net Billing / Net Feed – In Connection Agreement

This Agreement is made and entered into at (location) _____ on this (date) _____ day of (month) _____ (year) _____ between the Prosumer (Name) _____ having premises at (address) _____ and Consumer No. _____ as the first Party of this agreement,

AND

The Distribution Licensee _____ (hereinafter referred to as 'the Licensee') and having its Registered Office at (address) _____ as second Party of this Agreement;

Whereas, the Prosumer has applied to the Licensee for approval of a Net Metering Arrangement under the provisions of the Arunachal Pradesh Electricity Regulatory Commission (Grid Interactive Distributed Renewable Energy system with Net Metering, Net Billing/Net Feed-In, Gross Metering and its related matters) Regulations, 2024 and subsequent amendment thereof (herein after referred to as 'the Net Metering Regulations') and sought its connectivity to the Licensee's Distribution Network;

And whereas, the Licensee has agreed to provide Network connectivity to the Prosumer for injection of electricity generated from its Renewable Energy system of _____ kW;

Both Parties here by agree as follows:

1. Eligibility

1.1. The Renewable Energy Generating System meets the applicable norms for being integrated in to the distribution network, and that the Prosumer shall maintain the System accordingly for the duration of this Agreement.

2. Technical and Inter-Connection Requirements

2.1. The metering arrangement and the inter-connection of the Renewable Energy Generating System with the Network of the Licensee shall be as per the provisions of the aforesaid Regulations and the technical standards and norms specified by the Central Electricity Authority for connectivity of distributed generation resources and for the installation and operation of meters.

2.2. Renewable Energy generation plant under Net Billing / Net Feed – In system will conform to the standards and requirements specified in aforesaid Regulations and in the following Regulations and codes as amended from time to time:

- (i) Central Electricity Authority (Technical Standards for connectivity of the Distributed Generating Resources) Regulations, 2013 and subsequent amendments thereof;
- (ii) Central Electricity Authority (Installation and Operation of Meters) Regulation 2006 and subsequent amendments thereof;
- (iii) Central Electricity Authority (Measures of Safety and Electricity Supply) Regulations, 2023 and subsequent amendments thereof;
- (iv) Grid Code Regulations framed by the Commission;
- (v) Supply Code Regulations framed by the Commission;
- (vi) Any other provisions applicable to the electricity consumer of the Distribution Licensee.

2.3. The Prosumer agrees, that he shall install, prior to connection of the Renewable Energy Generating System to the Network of the Licensee, an isolation device (both automatic and in-built within inverter and external manual relays); and the Licensee shall have access to it if required for the repair and maintenance of the distribution Network.

2.4. The Licensee shall specify the interface/inter-connection point and metering point.

2.5. The Prosumer shall furnish all relevant data, such as voltage, frequency, circuit breaker, isolator position in his System, as and when required by the Licensee.

3. Safety

3.1. The equipment connected to the Licensee's distribution System shall be compliant with relevant International (IEEE/IEC) or Indian standards (BIS), as the case may be, and the installation of electrical equipment shall comply with the requirements specified by the Central Electricity Authority regarding safety and electricity supply.

3.2. The design, installation, maintenance and operation of the Renewable Energy Generating System shall be undertaken in a manner conducive to the safety of the Renewable Energy Generating System as well as the Licensee's Network.

3.3. If, at any time, the Licensee determines that the Prosumer's Renewable Energy Generating System is causing or may cause damage to and/or results in the Licensee's other consumers or its assets, the Prosumer shall disconnect the Renewable Energy Generating System from the distribution Network up on direction from the Licensee, and shall under take corrective measures at his own expense prior to reconnection.

3.4. The Licensee shall not be responsible for any accident resulting in injury to human beings or animals or damage to property that may occur due to back-feeding from the Renewable Energy Generating System when the grid supply is off. The Licensee may disconnect the installation at any time in the event of such exigencies to prevent such accident.

4. Other Clearances and Approvals

4.1. The Prosumer shall obtain any statutory approvals and clearances that may be required, such as from the Electrical Inspector or the municipal or other authorities, before connecting the Renewable Energy Generating System to the distribution Network.

5. Period of Agreement and Termination

5.1. This Agreement shall be for a period for 20 years, but may be terminated prematurely

- 5.1.1. By mutual consent; or
- 5.1.2. By the Prosumer, by giving 30 days' notice to the Licensee;
- 5.1.3. By the Licensee, by giving 30 days' notice, if the Prosumer breaches any terms of this Agreement or the provisions of the Net Metering Regulations and does not remedy such breach within 30 days, or such other reasonable period as may be provided, of receiving notice of such breach, or for any other valid reason communicated by the Licensee in writing;
- 5.1.4. By the Licensee, by giving 30 days' notice, if the Prosumer fails to pay his dues in a timely manner or indulges in any malpractices.

6. Access and Disconnection

- 6.1. The Prosumer shall provide access to the Licensee to the metering equipment and disconnecting devices of Renewable Energy Generating System, both automatic and manual, by the Prosumer.
- 6.2. If, in an emergent or outage situation, the Licensee cannot access the disconnecting devices of the Renewable Energy Generating System, both automatic and manual, it may disconnect power supply to the premises.
- 6.3. Upon termination of this Agreement under Clause 5, the Prosumer shall disconnect the Renewable Energy Generating System forthwith from the Network of the Licensee.

7. Liabilities

- 7.1. The Parties shall indemnify each other for damages or adverse effects of either Party's negligence or misconduct during the installation of the Renewable Energy Generating System, connectivity with the distribution Network and operation of the System.
- 7.2. The Parties shall not be liable to each other for any loss of profits or revenues, business interruption losses, loss of contract or goodwill, or for indirect, consequential, incidental or special damages including, but not limited to, punitive or exemplary damages, whether any of these liabilities, losses or damages arise in contract, or otherwise.

8. Commercial Settlement

- 8.1. The commercial settlements under this Agreement shall be in accordance with Net Metering Regulations in force.
- 8.2. The units exported by the Renewable Energy Generating Station in the billing period shall be purchased by the Distribution Licensee at ₹ _____ per kWh as per feed-in tariff approved by the consumption, for the entire duration of the Agreement.
- 8.3. The Licensee shall not be liable to compensate the Prosumer if his Renewable Energy Generating System is unable to inject surplus power generated into the Licensee's Net work on account of failure of power supply in the grid/Network.
- 8.4. The Licensee shall issue net bill as per the billing cycle after accounting for the units exported by the Renewable Power Developer at feed –in tariff approved by the Commission and after accounting for units imported from grid at applicable Tariff Order.

9. Connection Costs

- 9.1. The Prosumer shall bear all costs related to the setting up of the Renewable Energy Generating System, including the cost of the Renewable Energy Generation Meter.

10. Dispute Resolution

- 10.1. Any dispute arising under this Agreement shall be resolved promptly, in good faith and in an equitable manner by both the Parties.
- 10.2. The Prosumer shall have recourse to the concerned Consumer Grievance Redressal Forum constituted under the relevant Regulations in respect of any grievance regarding billing, which has not been redressed by the Licensee.

In the witness, where of (Name) _____ for and on behalf of Prosumer) and

(Name) _____ for and on behalf of _____ (Licensee) agree to this agreement.

Prosumer/ Third Party

Name:

Address:

Service Connection No.

Distribution Licensee

Name:

Designation:

Office Address.

Annexure 5: Model Gross Metering Connection Arrangement

This Agreement is made and entered into at (location) _____ on this (date) _____ day of (month) _____ (year) _____ between the Prosumer (Name) _____ having premises at (address) _____ and Consumer No. _____ as the first Party of this agreement,

AND

The Distribution Licensee _____ (hereinafter referred to as 'the Licensee') and having its Registered Office at (address) _____ as second Party of this Agreement;

Whereas, the Prosumer has applied to the Licensee for approval of a Net Metering Arrangement under the provisions of the Arunachal Pradesh Electricity Regulatory Commission (Grid Interactive Distributed Renewable Energy system with Net Metering, Net Billing/Net Feed-In, Gross Metering and its related matters) Regulations, 2024 and subsequent amendment thereof (herein after referred to as 'the Net Metering Regulations') and sought its connectivity to the Licensee's Distribution Network;

And whereas, the Licensee has agreed to provide Network connectivity to the Prosumer for injection of electricity generated from its Renewable Energy system of _____ kW;

Both the parties hereby agree to as follows:

1. Eligibility

1.1 The Renewable Energy Generating System meets the applicable norms for being integrated into the distribution network, and that the Prosumer shall maintain the System accordingly for the duration of this Agreement.

2. Technical and Interconnection Requirements

2.1 Renewable Energy generation plant under gross metering system will conform to the standards and requirements specified in aforesaid Regulations and in the following Regulations and codes as amended from time to time:

- (i) Central Electricity Authority (Technical Standards for connectivity of the Distributed Generating Resources) Regulations, 2013 and subsequent amendments thereof;
- (ii) Central Electricity Authority (Installation and Operation of Meters) Regulation 2006 and subsequent amendments thereof;
- (iii) Central Electricity Authority (Measures of Safety and Electricity Supply) Regulations, 2023 and subsequent amendments thereof;
- (iv) Grid Code Regulations framed by the Commission;
- (v) Supply Code Regulations framed by the Commission;
- (vi) Any other provisions applicable to the electricity consumer of the Distribution Licensee.

2.2 The Prosumer agrees, that he shall install, prior to connection of the Renewable Energy Generating System to the Network of the Licensee, an isolation device (both automatic and in-built within inverter and external manual relays); and the Licensee shall have access to it if required for the repair and maintenance of the distribution Network.

2.3 The Prosumer agrees that in case of a power outage Licensee's system, photovoltaic system will disconnect/isolate automatically and his plant will not inject power into Licensee's distribution system.

2.4 All the equipment connected to distribution system shall be compliant with relevant International (IEEE/IEC) or Indian standards (BIS) and installations of electrical equipment must comply with Central Electricity Authority (Measures of Safety and Electricity Supply) Regulations, 2010.

2.5 The Prosumer agrees that Licensee will specify the interface/interconnection point and metering point.

2.6 The Prosumer and Distribution Licensee agree to comply with the relevant CEA and Arunachal Pradesh Regulations in respect of operation and maintenance of the plant, drawing and diagrams, site responsibility schedule, harmonics, synchronization, voltage, frequency, flicker etc.

2.7 Due to Licensee's obligation to maintain a safe and reliable distribution system, the Prosumer agrees that if it is determined by the Licensee that the respective owner's photovoltaic system either causes damage to and/or produces adverse effects affecting other consumers or Licensee's assets, the Prosumer will have to disconnect photovoltaic system immediately from the distribution system upon direction from the Licensee and correct the problem at his own expense prior to a reconnection.

3. Clearances and Approvals

3.1 The Prosumer agrees to obtain all the necessary approvals and clearances (environmental and grid connection related) before connecting the photovoltaic system to the distribution system.

4. Access and Disconnection

4.1 Licensee shall have access to metering equipment and disconnecting means of the Renewable Energy system, both automatic and manual, at all times.

4.2 In emergency or outage situation, where there is no access to the disconnecting means, both automatic and manual, such as a switch or breaker, Licensee may disconnect service to the premises of the prosumer.

5. Liabilities

5.1 Prosumer and Licensee will indemnify each other for damages or adverse effects from either party's negligence or intentional misconduct in the connection and operation of photovoltaic system or Licensee's distribution system.

5.2 Licensee and prosumer will not be liable to each other for any loss of profits or revenues, business interruption losses, loss of contract or loss of goodwill, or for indirect, consequential, incidental or special damages, including, but not limited to, punitive or exemplary damages, whether any of the said liability, loss or damages arise in contract, or otherwise.

5.3 Licensee shall not be liable for delivery or realization by prosumer for any fiscal or other incentive provided by the Central/State Government beyond the scope specified by the Commission in its relevant Order

5.4 The Licensee may consider the quantum of electricity generation from the Renewable Energy system towards meeting its RPO.

6. Commercial Settlement

6.1 All the commercial settlement under this agreement shall follow the aforesaid Regulations issued by the Commission.

7. Connection Costs

7.1 The Prosumer shall bear all costs related to setting up of photovoltaic system including metering and interconnection costs. The First Party agrees to pay the actual cost of modifications and upgrades to the service line required to connect photovoltaic system to the grid in case it is required.

8. Termination

8.1 The Prosumer can terminate agreement at any time by providing Licensee with 30 days' prior notice.

8.2 Licensee has the right to terminate Agreement on 30 days' prior written notice, if the Prosumer commits breach of any of the term of this Agreement and does not remedy the breach within 30 days of receiving written notice from Licensee of the breach.

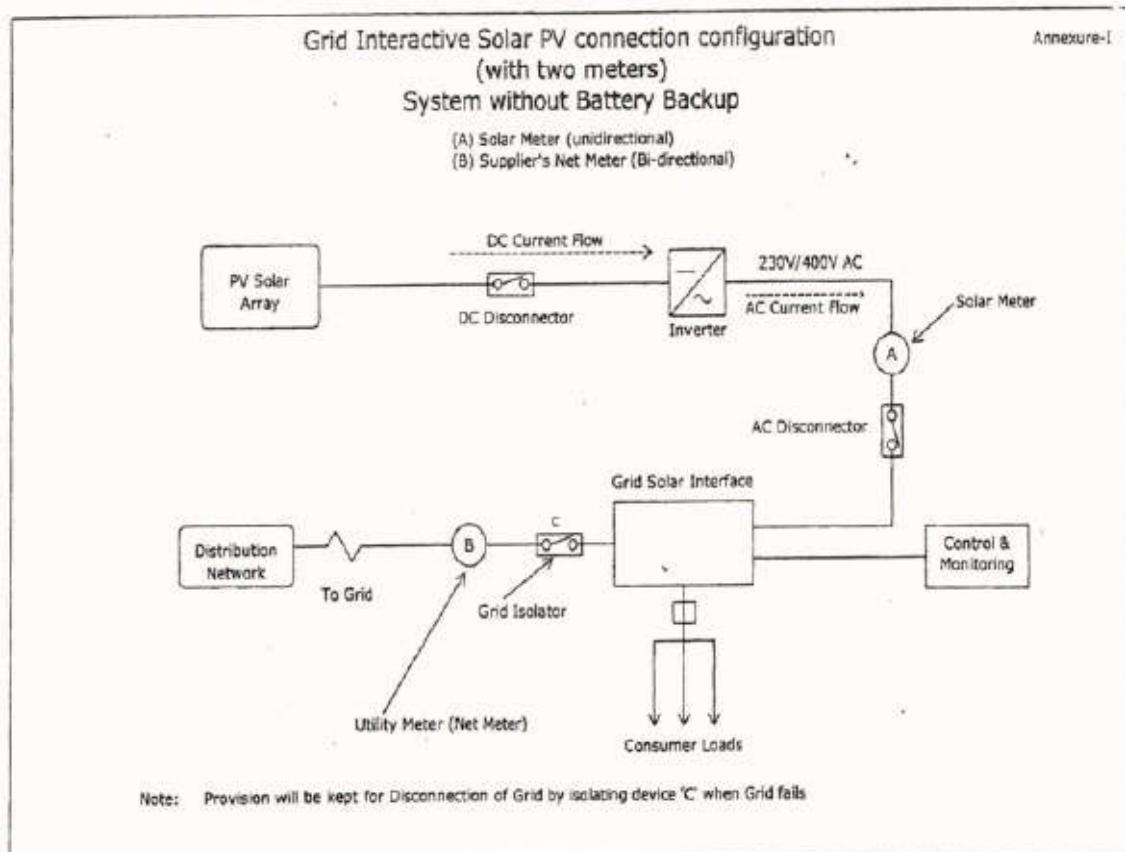
8.3 The Prosumer shall upon termination of this Agreement, disconnect the Renewable Energy System from Licensee's distribution system in a timely manner and to Licensee's satisfaction.

In witness, where of Mr. _____ for and on behalf of (Prosumer or third-party owner) and

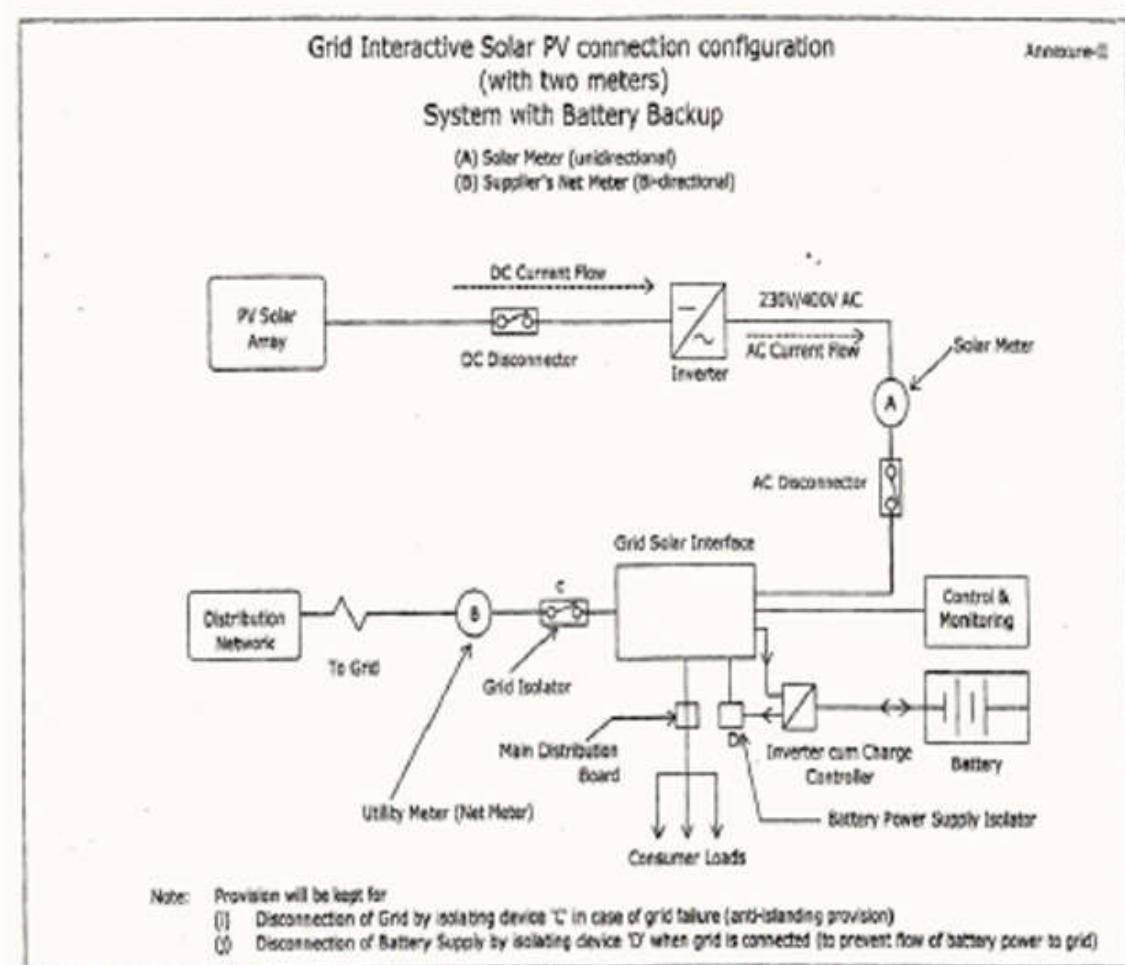
Mr. _____ for and on behalf of (Licensee) sign this agreement in two originals.

Prosumer/ Third Party**Name:****Address:****Service Connection No.****Distribution Licensee****Name:****Designation:****Office Address.**

Annexure 5A



Annexure 5B



ANNEXURE 6: Model Application Form for installation of Distributed Renewable Energy System under Net Metering/Net Billing/Gross Metering arrangement

Name of Distribution Licensee []

Name of Administrative Office []
(To be filled by the Applicant in BLOCK LETTERS)

1. Applicant's Full Name :
2. Address of the premises at which Renewable Energy System /Project is to be installed. :
3. Telephone/Mobile Nos. :
4. E-mail ID (if available) :
5. Alternate Address for communication (if any) :
6. Category of existing electricity connection :
7. Consumer No. :
8. Sanctioned Load/Contract Demand (in kW/kVA/HP). :
9. Preferred Metering Arrangement :

(Net Meter: Capacity of the Distributed Renewable Energy Project must be between 1 Kw and 500 kw

Net billing/Net Feed-In: Capacity of the Distributed Renewable Energy Project must be between 500 kw and 1000 kw)

Gross Meter: Capacity of the Distributed Renewable Energy Project must be between 1 kw and 1000 kw)

10. Voltage at which existing supply has been given (in volts). :
11. Proposed AC capacity of Renewable Energy System to be installed (in kW):
12. Voltage at the output of Renewable Energy inverter (in volts), if applicable. :

Details of Registration Fee paid (₹ 500) :

Date: _____

Signature of Applicant.

Application No. _____

Date of Receipt: _____

List of documents attached with Application Form

1. Copy of the latest paid electricity bill.
2. General Power of Attorney in favour of signatory in case of Partnership Firms; certified true copy of the Resolution, authorizing the signatory to deal with the concerned Distribution Licensee, passed by the Board of Directors in case of Companies (as applicable).
3. Technical details of Distributed Renewable Energy Project, Inverter and other equipment of system proposed to be installed.
4. Proof of payment of Registration Fee.

.....

ACKNOWLEDGEMENT

Received an Application from for connectivity/installation of Renewable Energy System of capacity of kW as per details below:-

Date of Receipt	Applicant's Name	Application Number	Existing Consumer No.	Capacity of Renewable Energy System
1	2	3	4	5

Date:

(Signature and Designation of Authorized Office)
